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EXAMINER

RIDLEY, BASIA ANNA

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 07/17/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/548,511

Applicant(s)

ARENCIBIA, JOSE P

Examiner

Basia Ridley

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-- The MAILING DATE of this communication appears in the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 6-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION***Election/Restrictions***

1. Applicant's election with traverse of Invention III, Species 1, 4 and 9 in Paper No. 5 is acknowledged. The traversal is on the ground(s) that the mere difference between the classification does not give rise to sustaining a restriction requirement. This is not found persuasive. MPEP § 803 sets forth that there are two criteria for a proper requirement for restriction between patentably distinct inventions: "(A) The inventions must be independent (see MPEP § 802.01, § 806.04, § 808.01) or distinct as claimed (see MPEP § 806.05 - § 806.05(i)); and (B) There must be a serious burden on the examiner if restriction is required (see MPEP § 803.02, § 806.04(a) - § 806.04(i), § 808.01(a), and § 808.02)." Additionally is sets forth that "a serious burden on the examiner may be prima facie shown if the examiner shows by appropriate explanation of separate classification, or separate status in the art, or a different field of search as defined in MPEP § 808.02." The examiner would like to point the applicant to Paper 4 paragraphs 2-4, where the examiner has set forth the reasons why the inventions are independent and why there is a serious burden on the examiner if restriction is required.

In response to applicant's statements, that Species 1-3 do not define a patentably distinct invention but are alternative embodiments of the basic invention, and that Species 4-8 are not species but merely subassemblies and subcombinations that can be used with the invention, the examiner would like to point out that said statements fall far short of the requirement to establish that species are not patentably distinct, as set forth in MPEP § 809.02(a) ("Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or

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clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.”).

The requirement is still deemed proper and is therefore made FINAL.

2. Claim(s) 6-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention.

Information Disclosure Statement

3. The International Search Reports cited in the information disclosure statement filed in Papers 2 and 3 have been considered, but will not be printed on any patent resulting from this application.

Priority

4. Acknowledgment is made of applicant's claim for domestic priority under 35 U.S.C. 120. The specification should be amended to include current status of all referenced nonprovisional parent applications.

Specification

5. The disclosure is objected to because it contains informalities and inconsistencies too numerous to point out specifically. Applicant's cooperation is requested in reviewing the disclosure and correcting any errors of which applicant becomes aware. Examples of such instances are as follows:
 - P8/L24-P9/L4, it is not clear if Fig. 5B is an alternate embodiment of Fig. 5C or of Fig. 5D;
 - inconsistent numbering of elements: P12/L15-16 “low “quality” (...) working fluid shown by arrow 10” and P13/L1-2 “high “quality” (...) working fluid shown by line 10”;
-

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- inconsistent numbering of elements: P12/L20 “vapor shown by line 12” and P13/L6 “liquid shown by line 12”;
- inconsistent numbering of elements: P12/L24 “combined vapor streams (...) 14” and P13/L10-11 “combined liquid streams (...) 14”.

The applicant is reminded that the above instances are merely exemplary and that the specification(s) should be carefully reviewed and revised to avoid informalities and inconsistencies. Appropriate correction is required.

Drawings

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because multiple reference characters have been used to designate more than one elements. The following examples are merely exemplary, as the instances are too numerous to point out specifically.

- “111” has been used to designate both a cylindrical section in Fig. 2A or 3A and conical section in Fig. 2B or 3B;

The applicant is reminded that the above instances are merely exemplary and that the drawing(s) should be carefully reviewed and revised to avoid informalities and inconsistencies. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because in multiple instances more than one reference character has been used to designate the same

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element. The following examples are merely exemplary, as the instances are too numerous to point out specifically.

- reference characters "111" and "114" in Fig. 2B or 3B have both been used to designate conical section of the reactor vessel;
- reference characters "112" and "111" in Fig. 3A have both been used to designate upper head of reaction vessel.

The applicant is reminded that the above instances are merely exemplary and that the drawing(s) should be carefully reviewed and revised to avoid informalities and inconsistencies. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include multiple reference sign(s) not mentioned in the description. The following examples are merely exemplary, as the instances are too numerous to point out specifically.

- "130" in Fig. 2A & 2B;
- "700" in Fig. 3A.

The applicant is reminded that the above instances are merely exemplary and that the drawing(s) should be carefully reviewed and revised to avoid informalities and inconsistencies. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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9. The drawing(s) is/are objected to as failing to comply with 37 CFR 1.84(q) because the contain multiple reference character(s) which are lacking lead lines between itself/themselves and the detail(s) to which it/they refers(s). The following examples are merely exemplary, as the instances are too numerous to point out specifically.

- "50", "60", "400" in Fig. 1A;
- "50" in Fig. 1B.

Applicant is reminded that reference characters which do not need lead lines because they indicate surface or cross-section on which they are placed must be underlined to make it clear that a lead line has not been left out by mistake.

The applicant is reminded that the above instances are merely exemplary and that the drawing(s) should be carefully reviewed and revised to avoid informalities and inconsistencies. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

10. The drawing(s) is/are objected to as failing to comply with 37 CFR 1.84(q) because the contain multiple reference character(s) which, while underlined and without a lead line, appear to be referring to an element next to them and not to the surface or cross-section on which they are placed. The following examples are merely exemplary, as the instances are too numerous to point out specifically.

- "400" in Fig. 1B;
 - "400" in Fig. 3A.
-

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Applicant is reminded that reference characters which do not need lead lines because they indicate surface or cross-section on which they are placed must be underlined to make it clear that a lead line has not been left out by mistake.

The applicant is reminded that the above instances are merely exemplary and that the drawing(s) should be carefully reviewed and revised to avoid informalities and inconsistencies. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim(s) 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 871,752 in view of Dallmeyer et al. (USP 5,387,396).

Regarding claims 1 and 4-5, GB 871,752, in Fig 1, discloses an insulated chemical reactor comprising:

- a reaction vessel (3) having a wall with inner and outer surface;
 - an evacuated insulation shell (1) spaced apart from and surrounding said reaction vessel (3);
 - a temperature controlling helical channel coil (5) fixed to said outer surface of said wall of said reaction vessel (3);
-

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- said helical channel coil (5) having at least two walls disposed normal to the outer surface of said wall of said vessel, thus defining an open helical channel coil fixed to said wall of said vessel (3);
- said helical coil (5) having a winding pitch so that successive coils of said channel coil are spaced apart from each other, thus defining a closed path to receive a fluid to contact said wall of said reaction vessel (Fig. 1);
- further including insulating material covering an outside surface of said helical channel coil (P2/L53-57).

The examiner notes that the intended purpose of the channel coil “serving to add structural strength (...)” does not require any structure that differs from the structure of GB 871,752. It is obvious, if not inherent, that the helical coil would add structural strength to the vessel. In addition, it would have been obvious to one of ordinary skill in the art to change the thickness of the reactor vessel wall, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955). Where the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device, and the device having the claimed dimensions would not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device, *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984). It is well known in the art that the thinner the walls in heat exchange vessel the better the heat exchange efficiency and that many design parameters are taken into consideration when determining the thickness of the walls.

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The reference does not explicitly disclose at least one isothermal mixing baffle disposed within said reaction vessel, a phase separator in fluid communication with said baffle, so that only one saturated of sub-cooled liquid phase of a heat transfer working fluid enters said isothermal mixing baffle or means to combine vapor from said phase separator and vapor from said isothermal mixing baffle and introduce said vapor into said helical channel coil.

Dallmeyer et al. teaches that it is known in the art to cool a reaction vessel by use of at least one isothermal mixing baffle (10) disposed within said reaction vessel, a phase separator (18) in fluid communication with said baffle (10), so that only one saturated of sub-cooled liquid phase of a heat transfer working fluid enters said isothermal mixing baffle (10), and means (20) to combine vapor from said phase separator (18) and vapor from said isothermal mixing baffle (10).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to add additional cooling capacity of at least one isothermal mixing baffle of Dallmeyer et al. to the chemical reaction vessel of GB 871,752 for the purpose of increasing cooling capacity of said reaction vessel.

While Dallmeyer et al. discloses that the combined vapor from the phase separator and the isothermal mixing baffle is recovered (abstract), the reference does not disclose any further use of said vapor. As one of ordinary skill in the art would realize that said vapor may still have heat capacity which can be used to further cool the reaction vessel, it would have been obvious to one having ordinary skill in the art at the time the invention was made to introduce said vapor to the helical channel coil to maximally utilize said cooling capacity. To do so would optimize the

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operation of the reaction vessel and would be done routine experimentation by an ordinary skilled artisan.

Regarding limitations recited in claims 1 and 4-5 which are directed to a manner of operating disclosed reactor, the examiner notes that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115.

13. Claim(s) 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 871,752 in view of Dallmeyer et al. (USP 5,387,396), as applied to claim 1 above, and further in view of Deane (USP 2,744,391) or Matsugi et al. (USP 5,667,758).

Regarding claims 3-4, GB 871,752 in view of Dallmeyer et al. disclose all of the claim limitations as set forth above, but the references do not explicitly disclose the temperature controlling helical channel coil comprising a generally rectangular shaped channel fixed to said outer surface of said reaction vessel and having two flat parallel walls, each in contact with said reaction vessel.

It is well known in the art that the channel coil can have a variety of shapes of configurations, including C-shaped (semicircular), square, circular, rectangular, polygonal, etc. (as evidenced by Deane, C2/L55-57, or Matsugi et al., C4/L61-65). The change in configuration of shape of a device is obvious absent persuasive evidence that the particular configuration is significant. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify vessel of GB 871,752 to include a variety of channel coil shapes, as taught by Deane and Matsugi et al. An

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ordinary skilled artisan would have been motivated to do the foregoing in order to increase the efficiency of heat exchange as well as simplify the manufacturing process.

Regarding limitations recited in claims 3-4 which are directed to a manner of operating disclosed reactor, the examiner notes that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115.

Conclusion


14. In view of the foregoing, none of the claims are allowed.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Basia Ridley, whose telephone number is (703) 305-5418. The examiner can normally be reached on Monday through Thursday, from 8:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (703) 308-6824.

The fax phone number for Group 1700 is (703) 872-9311 (for Official papers after Final), (703) 872-9310 (for other Official papers) and (703) 305-6078 (for Unofficial papers). When filing a fax in Group 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.


Basia Ridley
Examiner
Art Unit 1764

BR
July 14, 2003



**HIEN TRAN
PRIMARY EXAMINER**